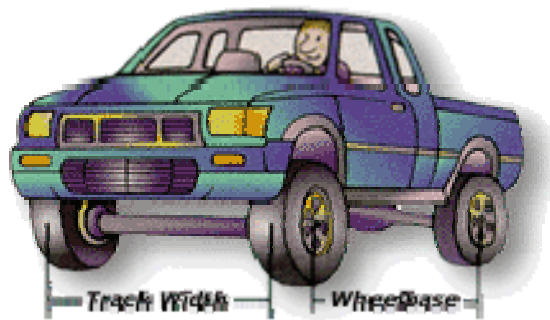


Montana Driver Education and Training

Strategies for Owning a Vehicle and Trip Planning Part II

Strategies for Buying and Maintaining a Vehicle



Standards and Benchmarks

1. Laws and Highway System

- a. know the laws outlined in the Montana Driver's manual
- b. understand the laws outlined in the Montana Driver's manual
- c. consistently demonstrate knowledge and understanding by responsible adherence to highway transportation system traffic laws and control devices

2. Responsibility

- a. recognize the importance of making safe and responsible decisions for owning and operating a vehicle
- d. develop habits and attitudes with regard to responsible driving

4. Vehicle Control

- a. demonstrate smooth, safe and efficient operation of a motor vehicle
- b. develop habits and attitudes relative to safe, efficient and smooth vehicle operation.

6. Risk Management

- a. understand driver risk-management principles
- b. demonstrate driver risk-management strategies
- c. develop driver risk-management habits and attitudes

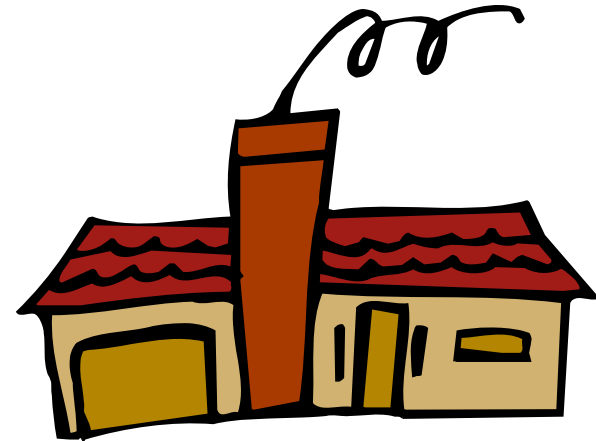
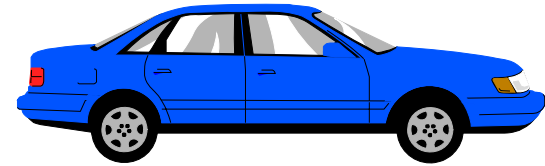
7. Lifelong Learning

- b. describe past, present and future motor vehicle laws
- e. identify opportunities for lifelong education in driving



PURCHASING A VEHICLE

- Owning a vehicle can give a driver a sense of freedom and mobility, but there is a price to be paid
- Few people realize the true costs of owning and operating a standard size vehicle can amount to over the \$250,000 over the course of a lifetime



Vehicle Purchase Cost

- Monthly payments and interest
- Insurance payments
- Repair and maintenance expenses
- Fuel mileage and costs
- Registration fees
- Before taking the first step toward ownership, know what you will need and the true cost to operate the vehicle



Determine Personal Needs

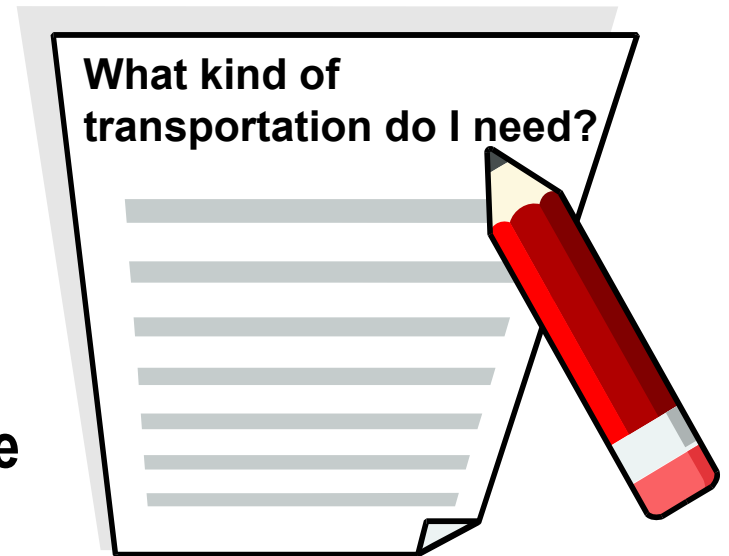
- Before starting out on a search for a vehicle, do your homework by gathering information and crunch the numbers to be sure what you choose has the most safety features you can afford

LOW, LOW
Auto Financing



What is a Vehicle Needed for?

- What type of vehicle is desired and why?
- What safety features must be included?
- How many passengers and ages will be carried?
- How many average miles will be driven weekly, monthly and yearly?
- What type of roadways will be traveled?
- Can alternative transportation achieve the same goal?
- How long (duration) will the vehicle be kept?



New Car Advantages

- **Warranty**
- **Financed for up to seven years**
- **Lower maintenance costs**
- **Holds up better under heavy use**
- **Replacement parts are usually easier to find**
- **More safety features**
- **Rebates**



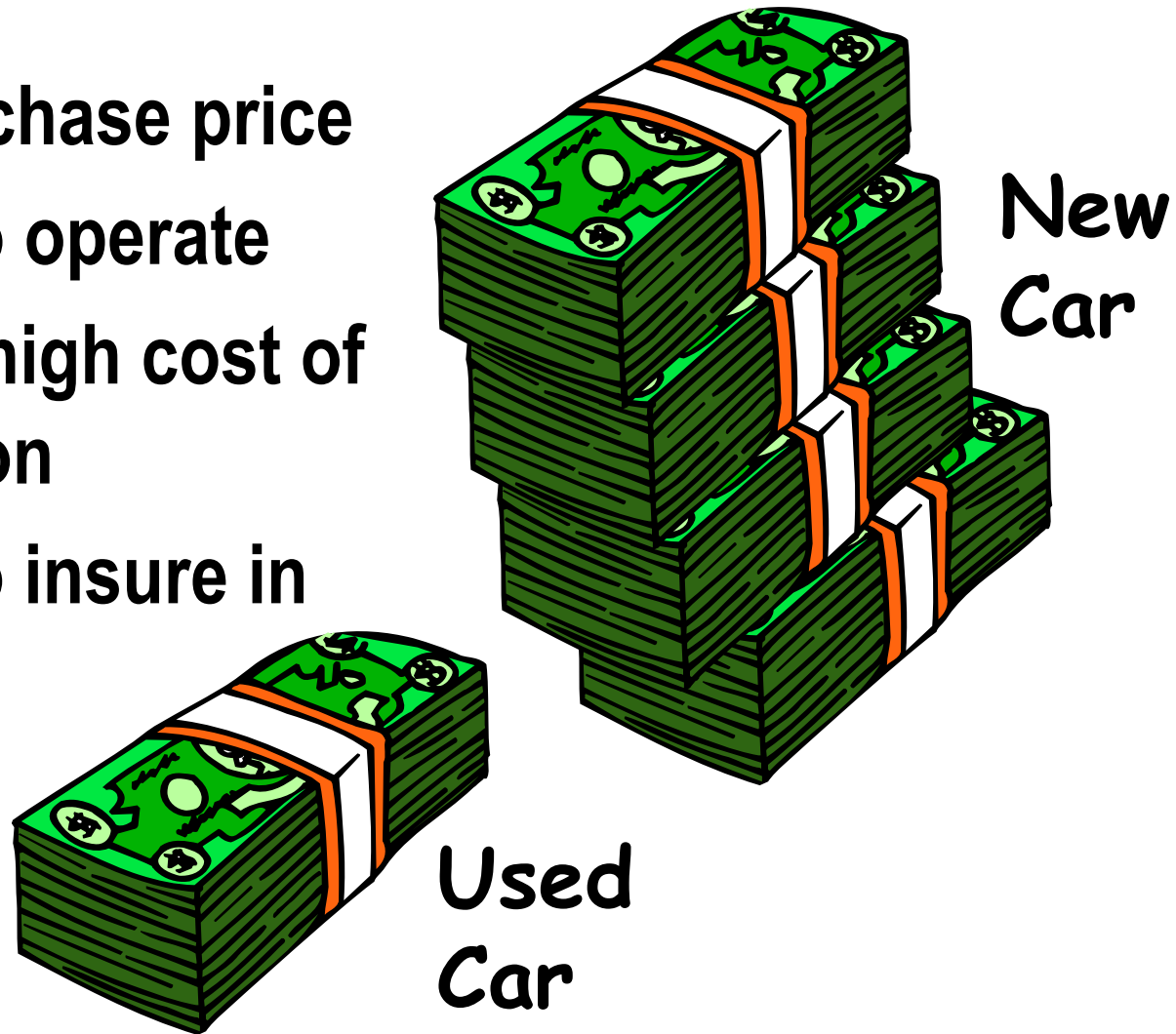
New Car Disadvantages

- The initial cost of the new vehicle is more than the used vehicle



Used Car Advantages

- Lower purchase price
- Cheaper to operate
- Avoid the high cost of depreciation
- Cheaper to insure in general



Used Car Disadvantages

- Difficulty knowing how and when it was serviced
- Damage may not be reported
- May or may not have warranty
- Private citizens do not generally provide a warranty
- Cost of having a certified mechanic perform a thorough inspection prior to purchase
- If purchasing from a private citizen, you must complete all the proper paperwork
- Documentation verifying that there are no liens on the vehicle
- Find the history of a vehicle and teen driving tips on the

Web at: www.Carfax.com



Calculating Cost to Own a Vehicle

Fixed Costs

- What and how much are the fixed costs that do not change based upon miles driven?
- The down payment
- Monthly loan payments
- Monthly Insurance
- Registration fees
- Taxes



Calculating Cost to Own a Vehicle

Flexible Cost

- What and how much will the flexible cost be based upon the miles driven each month?
- Gas
- Oil
- Tires
- Preventive Maintenance (includes car washes, parking fees)
- Repairs



Calculating Cost to Own a Vehicle

- How much can you afford each month?
- Identify all income then deduct expenses for:

Housing

Food

Clothes

Entertainment

Vehicle

Other



Is Leasing a Better Alternative?



Advantages of leasing

- Low—or no—down payment
- Lower out-of-pocket expenses to lease a car
- Lower monthly payments
- Able to drive a more expensive car that could otherwise not be affordable
- Maintenance costs should be lower the first three years
- May be able to buy the car



Is Leasing a Better Alternative?

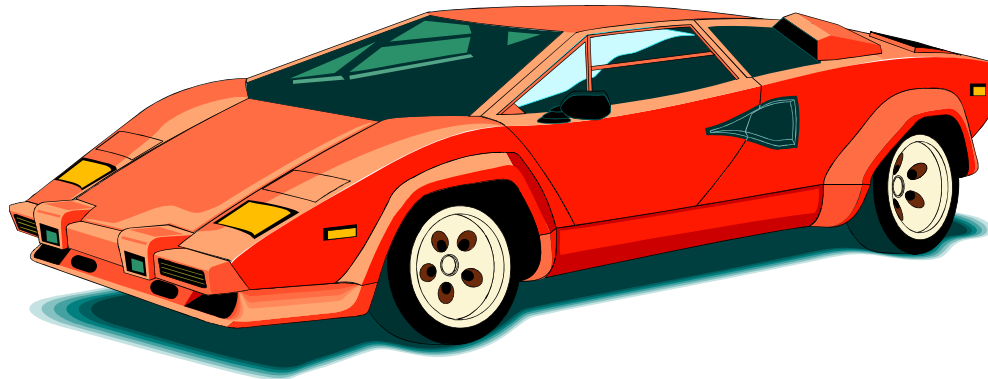
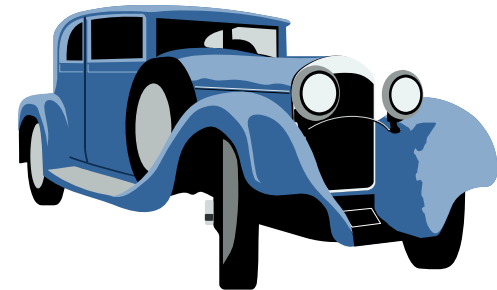
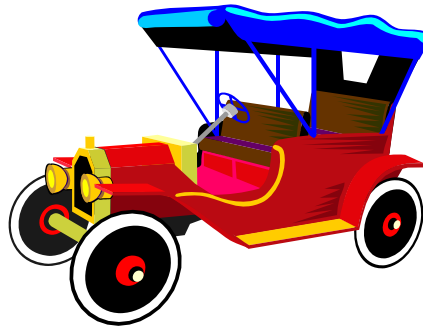
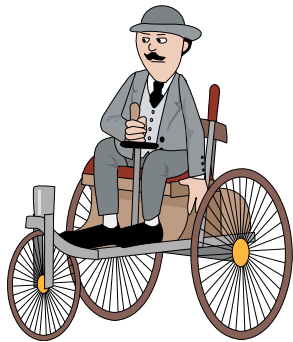
Disadvantages of leasing

- Leasing can be more expensive than buying a vehicle
- Security deposit required
- After the lease is completed, you will not have ownership equity
- A penalty may have to be paid for accumulating more miles than provided in the lease agreement
- Terminating the lease early may incur penalties that can amount to thousands of dollars



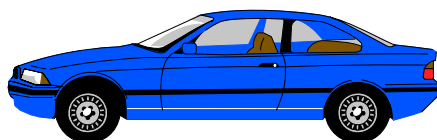
Vehicle Types

- Vehicles have come a very long way over the last 100 plus years and improved vehicle safety features have saved many lives

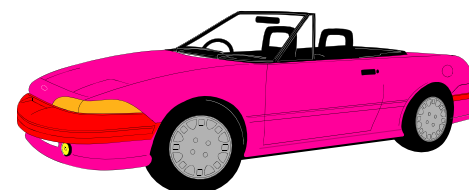
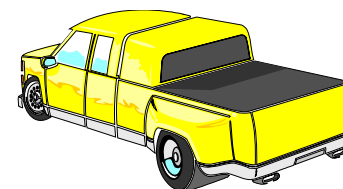


Vehicle Types

- 4-Door Sedans
- 2-Door Coupes
- Economy cars
- Station Wagons
- Four-wheel drive
- Mini-Vans



- Full Size Vans
- Sport Utility Vehicles
- Convertibles
- Sport cars
- Luxury
- Hybrids
- Pickups



Safety Features

- How well a vehicle protects its occupants from injury depends primarily on its structural design and safety systems
- All vehicles have “crumple zones” in the front that are designed to collapse in a way that helps absorb the crash energy and minimize any deformation of the interior cabin
- The better the vehicle manages this energy, the less chance that occupants will suffer serious injury

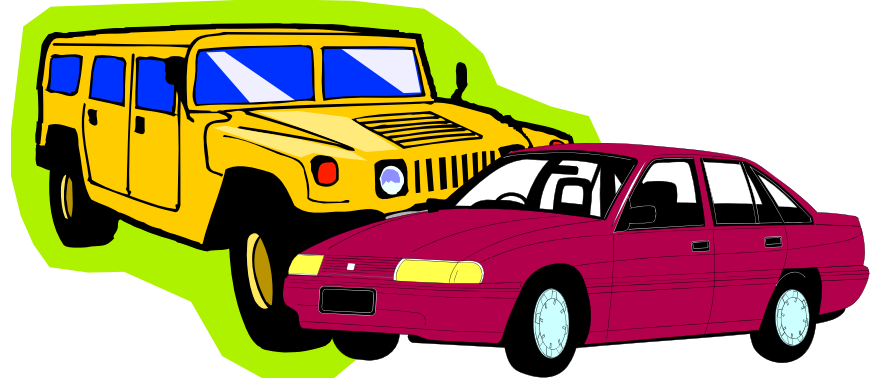


Photo Source: IIHS

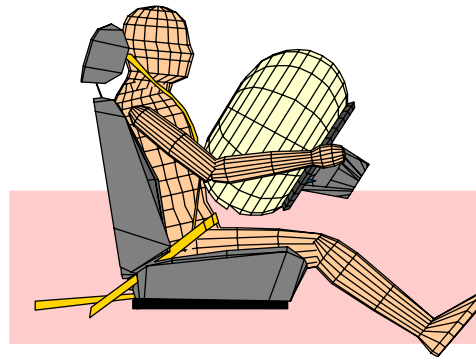


Safety Features — Three Categories

1. Size and weight of a vehicle



2. Passive safety features



3. Active safety features



Load Capacity

- It's natural to assume that if a vehicle has a large cargo area, you should be able to fill it without worrying about overloading the vehicle — that's not always the case
- Some vehicles have a large cargo area but a relatively low load-carrying capacity — the maximum combined weight of people and cargo that the vehicle is designed to handle safely



Load Capacity

- Overloading a vehicle can compromise its safety by degrading its handling, stressing its brakes, and possibly overheating its tires, which increases the risk of tire failure



Which Cars are the Safest?

- A question car buyers don't ask often enough is, *"Which cars are the safest?"*
- Motor vehicles are the number one killer of kids and adults in age groups one to 34, causing more fatalities than many other causes combined
- Take car buying seriously



Available Safety Features

- Traction control
- Skid control
- Electronic stability
- Cargo Nets and Hooks
- Crumple zones
- Safety glass
- Anti-lock brakes (ABS)
- Safety belts
- Air bags, front and sides
- Head restraints
- Daytime running lights



Photo source: NHTSA



Available Safety Features

- Ergonomics and Comfort
- Interior trunk release
- Retractable steering column
- Sliding door auto stop
- Night vision system
- Navigation systems
- Back up sensors
- Heated side mirrors/with turn signals
- Radio/CD controls in the steering wheel
- Child safety seats
- Window switches

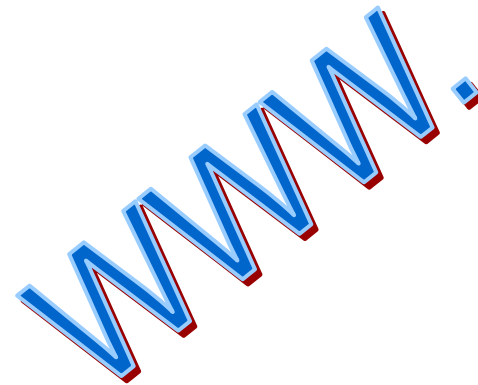


Photo source: NHTSA



New Vehicle Technology

- While wearing a seat belt remains the best way to survive a crash, new technology could add more features to make vehicles safer
- The following Web sites offer consumers vehicle crash rating comparisons
- Insurance Institute for Highway Safety
www.highwaysafety.org
- U.S. Department of Transportation
www.nhsa.dot.gov
- USAA Educational Foundation
www.usaaedfoundation.org



NHTSA's Rollover Resistance Rating

- Rollovers have a higher fatality rate than other kinds of crashes
- Vehicles are rated on their risk of rolling over in a single vehicle crash

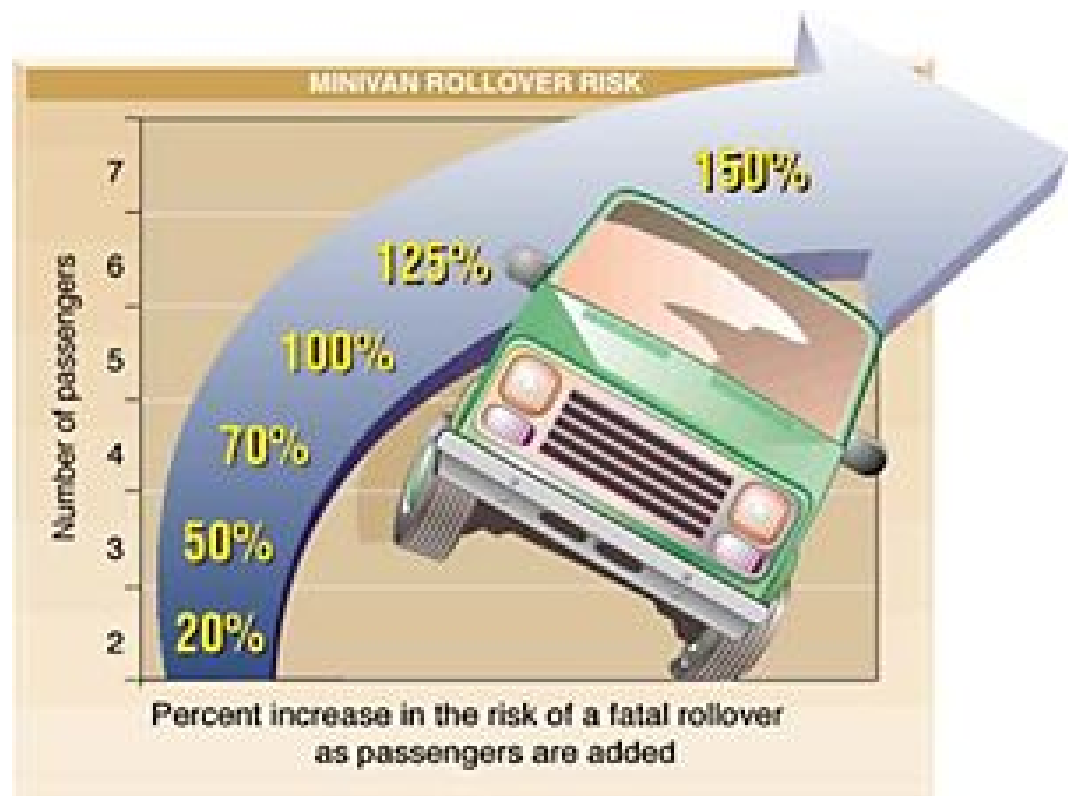


Photo source: NHTSA



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NHTSA Rollover Resistance Ratings can be accessed at www.nhtsa.dot.gov/ncap

NHTSA's Rollover Resistance Rating

- Vehicles are rated on their risk of rolling over in a single vehicle crash
- The more top-heavy the vehicle, the more likely it will roll over
- Vehicles are assigned stars that identify their rating
- The low rated vehicles (one star) are at least four times more likely to roll over than the highest rated vehicles (five stars)
- Even the highest rated vehicle can rollover, but you can reduce your chance of being killed in a rollover by about 75% just by wearing your seat belt



Rollover

Resistance Rating



Has a risk of rollover of less than
10 percent



Has a risk of rollover between
10 percent and 20 percent



Has a risk of rollover between
20 percent and 30 percent



Has a risk of rollover between
30 percent and 40 percent








Has a risk of rollover greater than
40 percent

Overall Ratings Based On Safety

SafeCarGuide.com evaluates all the available data on a specific vehicle and assigns it one of five possible performance ratings. The overall rating is not simply an average of the other scores, because certain categories count more from a safety point of view.

Overall Ratings Based On Safety

| | |
|---|--|
|  | Excellent Safety - Highly Recommended |
|  | Good Safety - Recommended |
|  | Acceptable But Better Choices Exist - Not Recommended |
|  | Marginal Safety - Unacceptable |
|  | Poor Safety - Unacceptable |

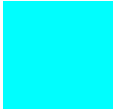
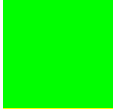
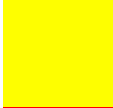

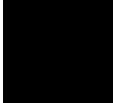


Weight Class Categories

SafeCarGuide.com evaluates all the available data on a specific vehicle and assigns it one of five possible performance ratings

The most significant safety determinant is weight

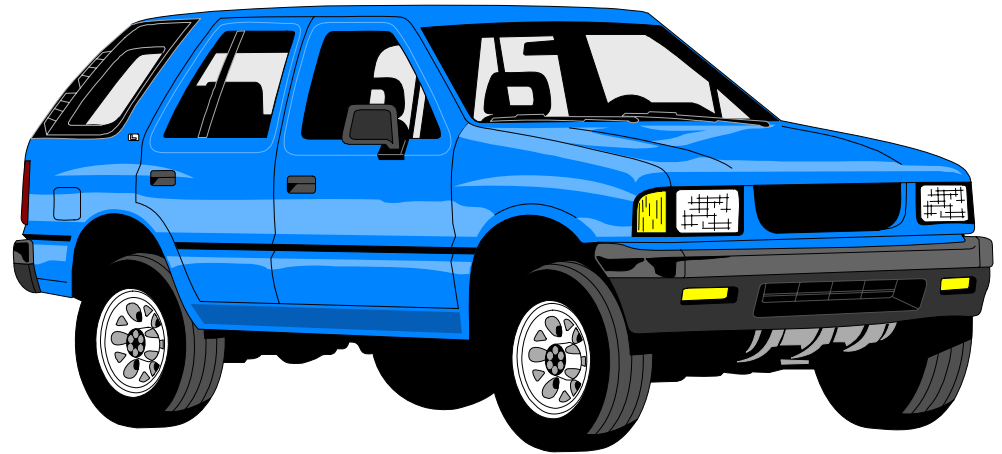
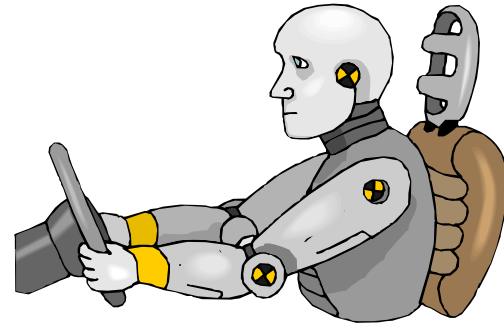
- Occupants of the lightest cars have dramatically higher death rates
- Heavy pickups and SUVs are associated with far higher death rates than other vehicles

| | |
|---|---|
|  | Blue: 3,500 lbs / 1,590 kgs or more |
|  | Green: 3,000-3,499 lbs / 1,363-1,589 kgs |
|  | Yellow: 2,600-2,999 lbs / 1,181-1,362 kgs |
|  | Red: 2,300-2,599 lbs / 1,045-1,180 kgs |
|  | Black: Less than 2,300 lbs / 1,045 kgs |



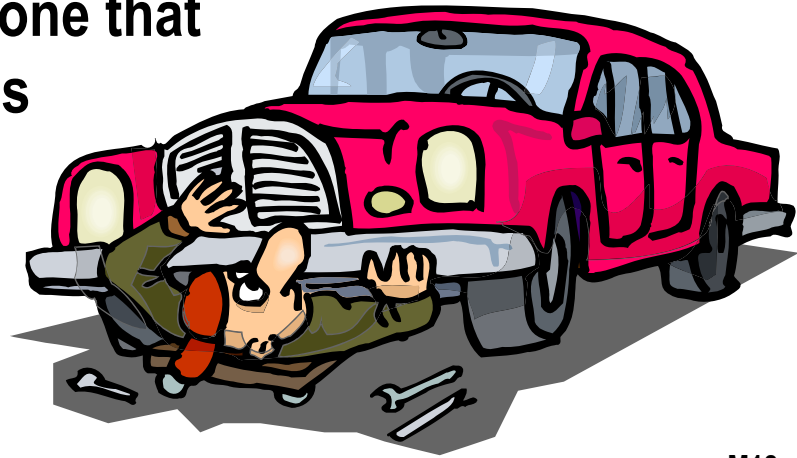
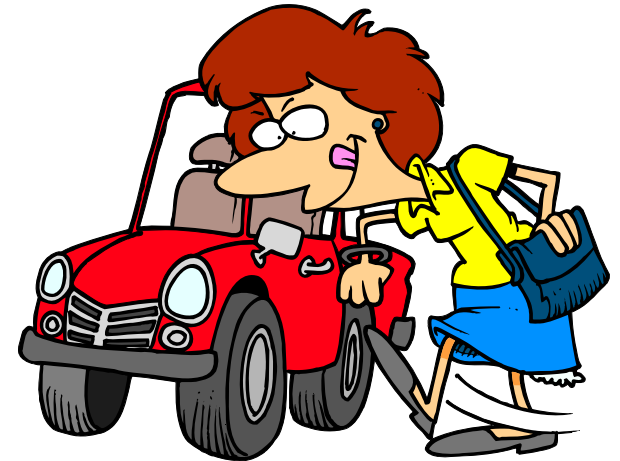
Heavier Vehicles will Generally Better Protect in a Crash

- This is particularly true in two-vehicle crashes
- NHTSA research historically has shown that occupants in passenger cars are at a greater risk of being fatally injured when struck in the front or the side by a heavier and higher-riding light truck (such as a pickup) or SUV
- Improved energy-absorbing front ends and safety technologies such as head protecting side-impact air bags can help lower this risk to vehicle occupants



Inspecting a Used Vehicle

- When choosing a vehicle, select one that has the most safety features that you can afford
- Avoid vehicles that are over six years old
- Until recently, SUVs and vans had a high rollover rate due to their high center of gravity
- If an SUV is the choice, choose one that has a wheelbase over 100 inches



Inspecting a Used Vehicle

- Brakes
- Traction Control and all wheel drive
- Fuel efficiency
- Good tires
- Good visibility



Inspect a Used Vehicle

- Create an inspection checklist
 - Check out the car's repair record, maintenance costs, and safety and mileage ratings in consumer magazines or online
- Look up the Kelly "blue book" value, and be prepared to negotiate the price using this Web site

www.kbb.com

- Make sure all oral promises are written into the Buyer's Guide
- You have the right to see a copy of the dealer's warranty before you buy



Inspect a Used Vehicle

- Ask for the car's maintenance record from the owner, dealer, or repair shop
- Test drive the car on hills, highways, and in stop-and-go traffic
- Have a mechanic inspect the vehicle
- Check out the dealer with local consumer protection officials
- If possible, talk to the previous owner
- If you buy a car "as is," you'll have to pay for anything that goes wrong after the sale

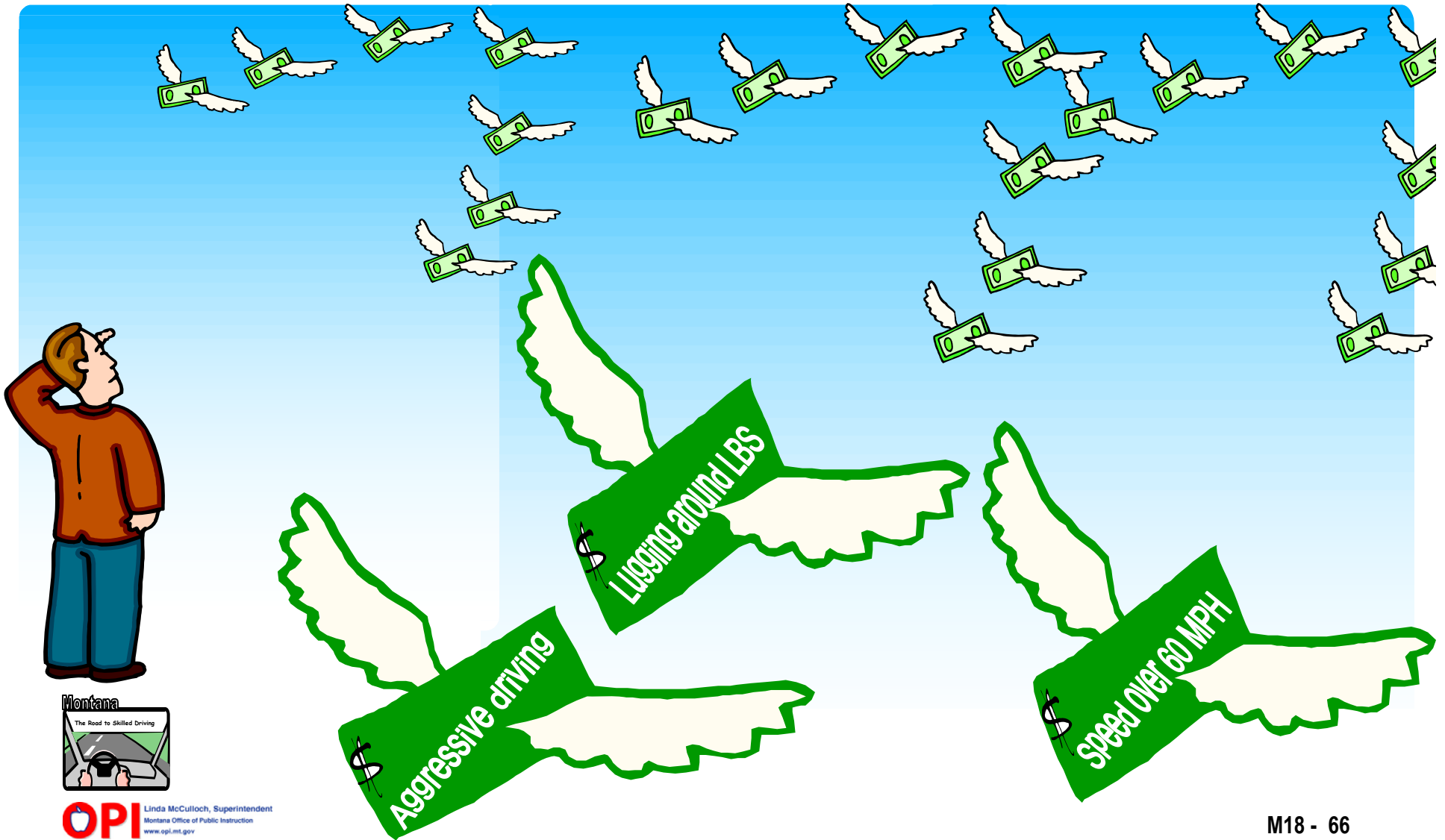


Fuel Economy

- The U.S. Department of Transportation reports that most new vehicles are driven 15,000 miles
- At 20 miles per gallon (mpg), with fuel at \$3.00 per gallon, your monthly new car fuel bill should average about \$225



Fuel Efficient Driving



Fuel Efficient Driving

- Combine errands; several short trips taken from a cold start can use twice as much fuel as one trip covering the same distance when the engine is warm
- Use overdrive gears and cruise control when appropriate to improve fuel economy
- Check the Web for fuel economy strategies



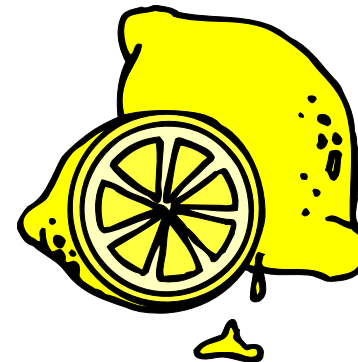
www.fueleconomy.gov



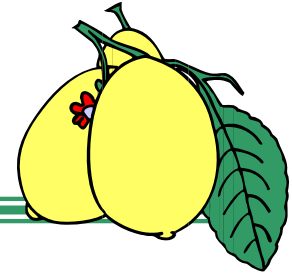
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Montana Office of Public Instruction
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Lemons—What is a Lemon?

- A vehicle that continues to have a defect that substantially impairs its use, value, or safety is a lemon
- Generally, if the car has been repaired four or more times for the same defect within the Warranty Period and the defect has not been fixed, the car qualifies as a Lemon



Montana's Lemon Law



- If the consumer had repairs four or more times during the warranty but the defect continues to exist
- If the vehicle is out of service for a cumulative total of 30 or more business days
- This law applies to a vehicle that is less than two years old and with 18,000 miles or less on its odometer.
- The Lemon Law covers new or demonstrator motor vehicles, including trucks of 10,000 lbs. or less gross vehicle weight (gvw) that are purchased or leased in Montana
- Trucks over 10,000 lbs. gvw, non-motorized and off-road vehicles, motorcycles and the "residential" portion of motor homes are not covered under the Montana Lemon Law



Financing the Purchase

- Financing increases the price of cars by spreading out the purchase price and loan interest over a longer period of time
- Longer financing period (up to 72 months) enables many people to buy a newer or better vehicle than they can really afford



Financing the Purchase

- Credit history is the most significant contributing factor
- A person with good credit has an excellent repayment history
- A buyer with a poor credit history could pay 20% more
- Interest can add as much as 35% to your total cost
- If you have no credit history or your report is poor, you will be required to have a co-signer or personal guarantor for your loan
- Technically the co-signer is taking the loan out for you, but you are making the payments



Down Payments

- Most buyers will need a down payment for a loan or capital reduction payment for a lease in order to qualify for the loan or lease
- Make as large a down payment as you can possibly afford to reduce the interest cost of the loan



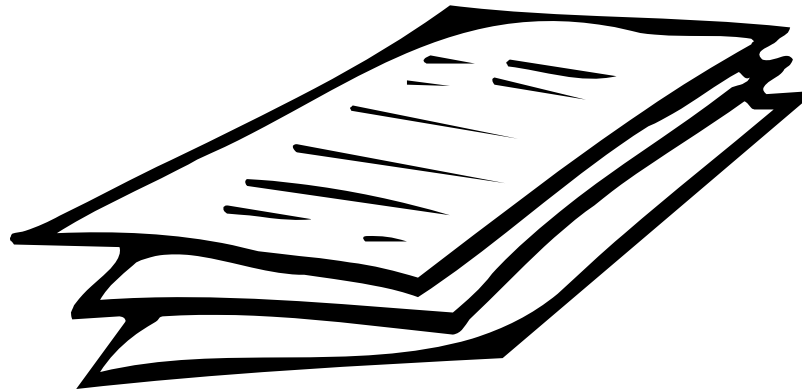
Tax and Tags

- Along with the purchase cost, the state adds sales taxes
- Don't forget to budget your registration, tag, and emissions fees, which can range from \$40 to \$600 annually, depending on where you live and what you drive



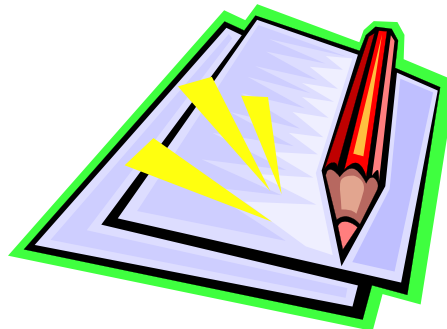
Title and Registration

- Obtain the Title and Registration receipt from the seller
- The title must be signed by all registered owners and signatures must be notarized
- The odometer reading must be recorded by the seller for all motor vehicles nine years old or newer
- Application for a new Title and Registration must be made to the County Treasurer of residence within 20 days



Motor Vehicle Registration

- All motor vehicles and all trailers must be registered at the county treasurer where you live
- The previous year's registration receipt or your renewal card notice must be presented when registering motor vehicles
- A copy of the registration certificate must be kept when registering motor vehicles
- The registration is your receipt and record of property tax or vehicle license fee paid to the county



License Plates

- Plates are issued by the county treasurer
- Plates are generally issued for a one - year period
- All license plates stay with the owners; it is their responsibility to remove them
- Plates may be transferred to another vehicle only when proper application is made through the county treasurer
- A vehicle may be operated without plates for a 20-day grace period, before registration, by displaying a 20-day permit
- Renewal notice is mailed
- Failure to receive the renewal notice does not relieve the owner of renewal responsibility



Registration and License Plate Fees

• MCA 61-3-321 Registration Rates for Light Vehicles

| <u>Age of Vehicle</u> | <u>Registration Rates</u> |
|------------------------|---------------------------|
| 0 to 4 years | \$217.00 |
| 5 to 10 years | \$87.00 |
| 11 years or more | \$28.00 |

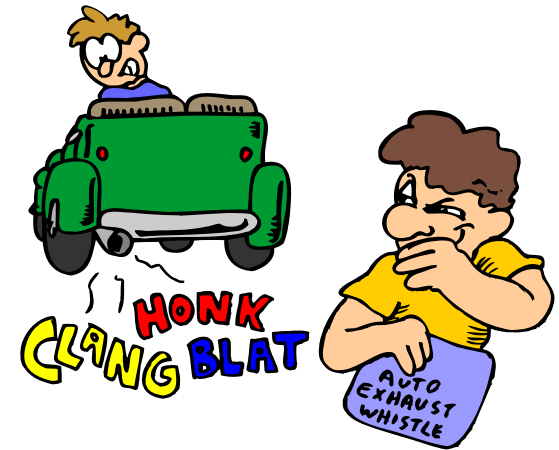
License Plate Fees:

- Motor vehicles weighing 2,850 lbs. and under \$13.75
- All passenger cars weighing over 2,850 lbs. and all trucks ... \$18.75
- Personalized license plates, \$25 in addition to other fees,
\$10 for renewal or transfer to another vehicle. Must be renewed by end of grace
period or plate will be available to another requesting such plate
 - Motorcycles \$ 9.75
 - Trailers 2,500 lbs. GVW \$ 8.25
 - Trailers over 2,500 lbs. up to 6,000 lbs. \$11.25
 - Trailers over 6,000 lbs. GVW \$16.25
 - Travel trailers \$11.75



MAINTAINING A VEHICLE

- Breakdowns and costly repairs can be avoided
- Be alert to sounds, smells and sights that could indicate a problem
- Regular maintenance and simple service can reduce the cost of vehicle ownership
- For maximum fuel efficiency and cleaner air, keep the engine in tune
- For safer driving, keep the brakes, steering and suspension systems in excellent condition



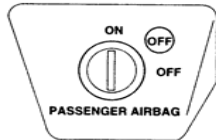
MAINTAINING A VEHICLE

- Read warranties and owner's manuals carefully
- Everything may not be covered on the warranty
- Modifications made to the vehicle that are outside the specifications of the vehicle could void all or part of the warranty
- Failure to comply with all service and maintenance could also void all or part of the warranty



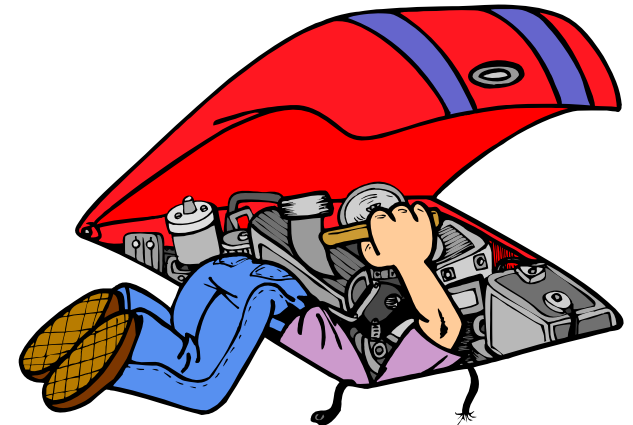
Dashboard Warning Symbols

- The warning and alert symbols should be monitored and action taken when the warning symbol comes on and remains on



Under the Hood and Around the Vehicle Maintenance Checks

- Check the antifreeze/coolant level weekly
- Inspect belts and hoses monthly
- Check transmission fluid monthly with engine warm and running, and parking brake on
- Check oil every other fill up
- Check the air filter every other month
- Check brake fluid monthly
- Keep windshield washer fluid reservoir full
- Check the battery with every oil change
- Check power steering fluid level once per month

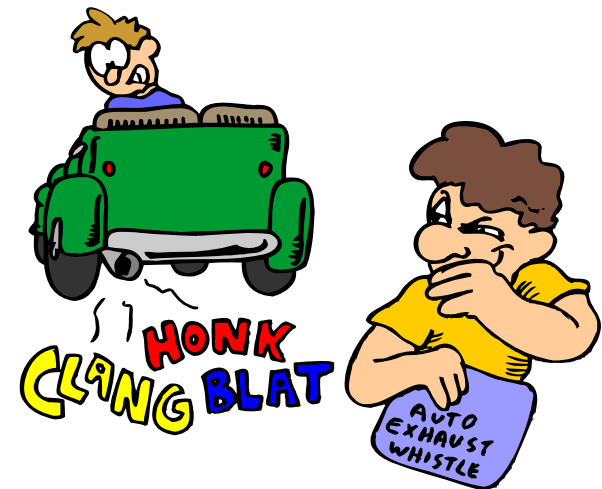


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Under the Hood and Around the Vehicle Maintenance Checks

Check around the vehicle

- Inspect windshield wiper blades
- Check lights are clean and working
- Keep tires inflated
- Look for signs of oil seepage
- Look underneath the vehicle for loose or broken exhaust clamps and supports
- Have emission checked at least once per year for compliance with any local laws



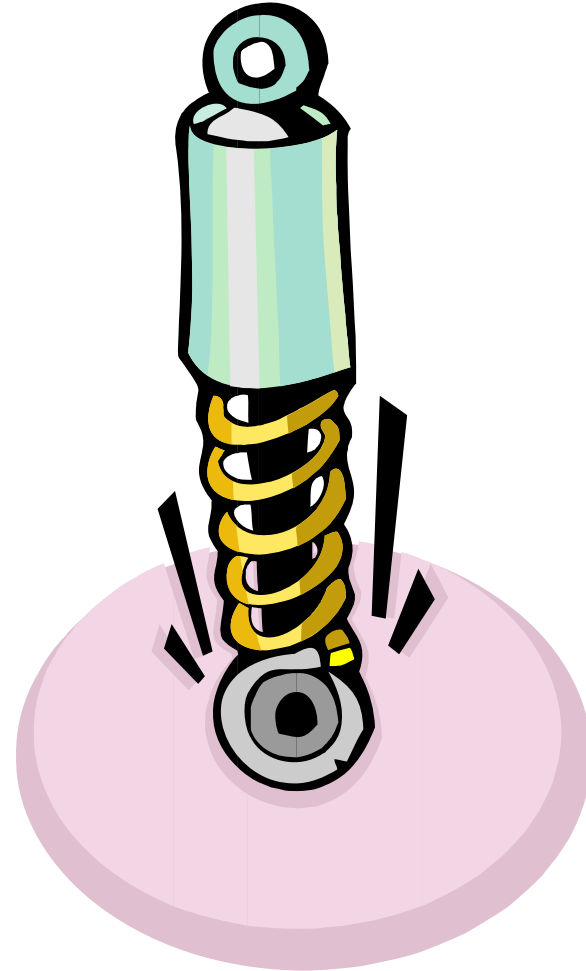
Steering Maintenance

- Power steering runs on fluid pressure and if there is a leak, steering becomes more difficult
- An engine belt problem can disable power steering
- running over potholes or hitting curbs can affect the wheel assembly and cause slow steering response



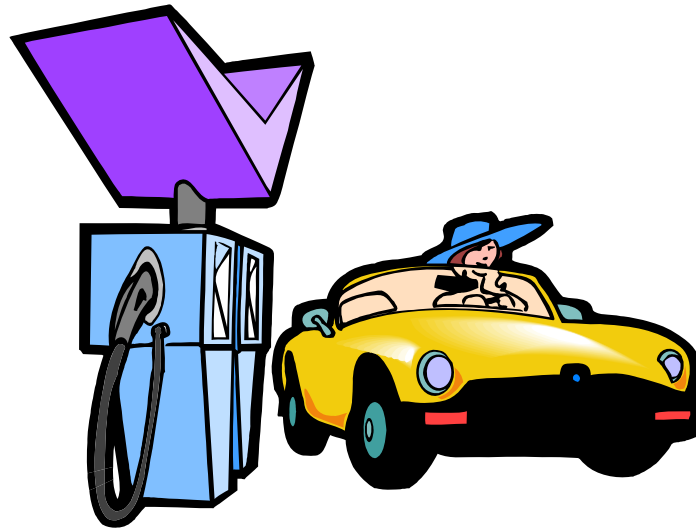
Suspension Maintenance

- If, after hitting a bump, the vehicle keeps bouncing the shock absorbers are worn or leaking
- Replace the shock absorbers
- The shock mounts may be broken or bent—repair or replace mounts



Fuel System Maintenance

- Keep fuel level above a quarter of a tank
- Keep condensation out of the fuel lines
- Do not run out of gas
- Follow regular maintenance schedules and instructions in the owner's manual



Electrical Maintenance

- Maintaining the electrical system can help prevent a stalled vehicle due to electrical problems
- Notice the lights on the instrument cluster

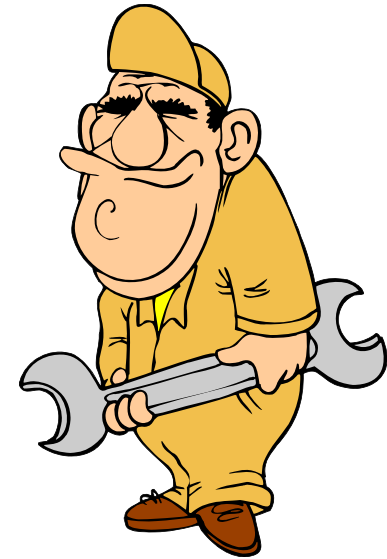
The red light for battery indicates if the battery is being charged properly by the alternator or not

- Check all exterior lights



Brakes Maintenance

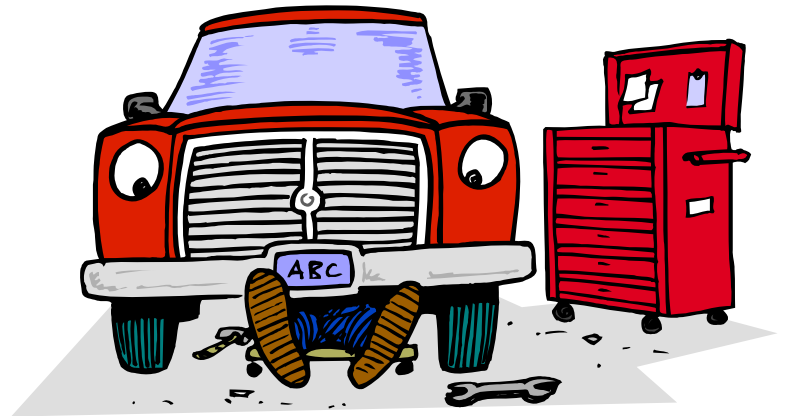
- Brake squeal has become common, as the hard brake pad grinds on the steel rotor
- Squealing brakes may also mean your pads are worn out, and the metal behind the pad is scraping against the rotor
- A vibration, pulsation or grinding noise when the brake is stepped on are signs that damage is being done to the rotors
- A brake inspection is the only way to find out for sure



Mechanical and Tire Malfunctions

Transmission

- Poor transmission performance may come from actual component failure or a simple disconnected hose or plugged filter
- Simple wear and tear can also take its toll
- Over time, transmission fluid can break down, evaporate or become contaminated
- Poor driving habits can also do irreparable damage



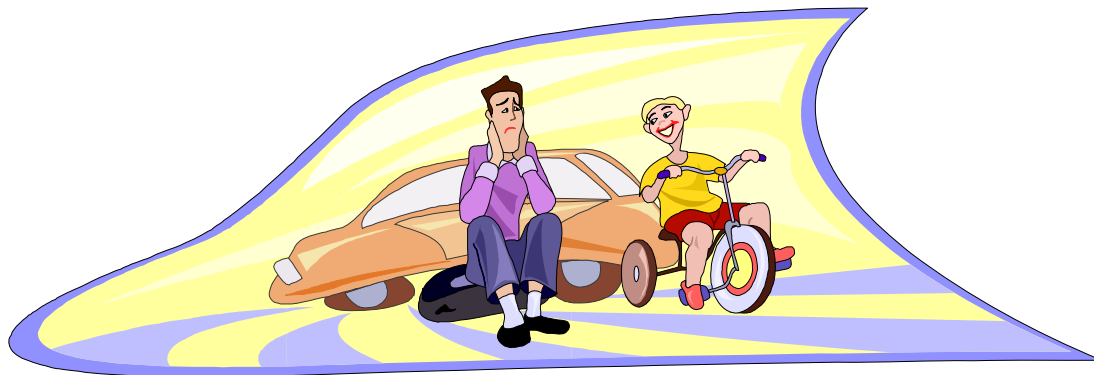
Transmission Problem Symptoms

- Abrupt or hard shifts between gears
- Delayed or no response when shifting from neutral to drive or reverse
- Failure to shift during normal acceleration
- Slippage during acceleration
- The engine speeds up, but the vehicle does not respond



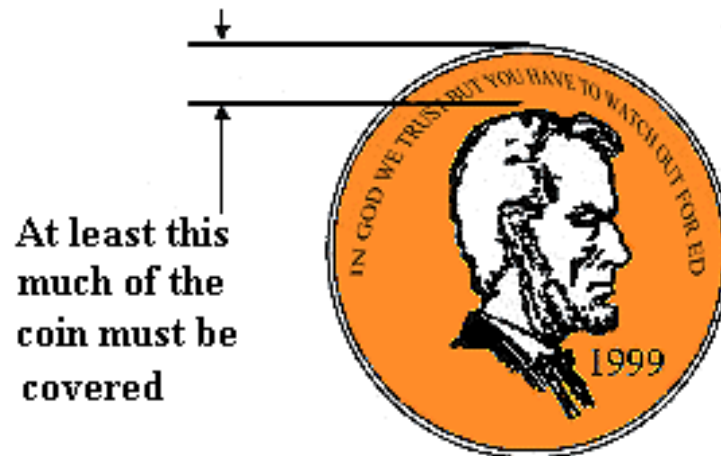
Tire Maintenance

- Check monthly and maintain the recommended pressure
- Improper pressure or damage to the tires caused by hitting curbs, potholes, etc., can cause premature tire failure and malfunction
- Tires could be 50-70% under recommended pressure before the eye can notice it
- Check tread — tread separation is dangerous and causes crashes



Tire Tread Wear Check

- Tires with less than 1/16 of an inch of tread depth are considered bald
- Check the wear bars (narrow strips of smooth rubber across the tread) to see if they are beginning to show
- To check tire tread wear, use the “penny” trick
- Inspect the tires for cuts, slashes, embedded objects, or other irregularities



Tire Rotation

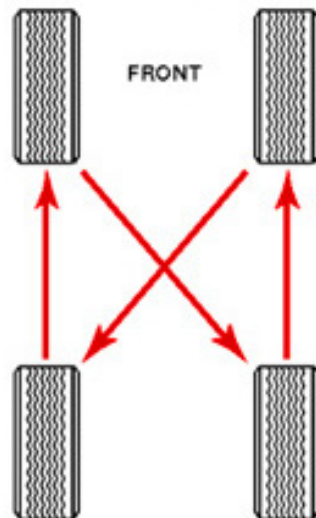
Rotate tires every six months or every 5,000 miles

- After rotation, adjust air pressure again
- Uneven or irregular pattern may indicate a significant alignment problem — have a qualified technician look at your vehicle

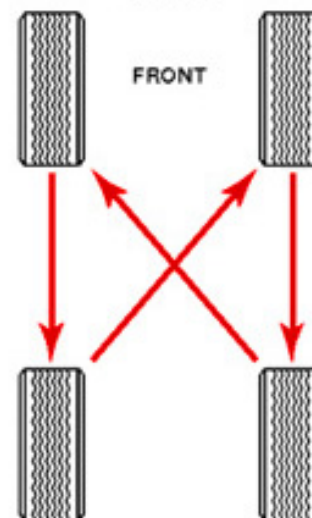
Tire Rotation

For maximum mileage, rotate your tires every 5,000 miles (8,000 Km). Follow the correct rotation patterns.

Rear and Four Wheel Drive Vehicles



Front Wheel Drive Vehicles



Tire Replacement

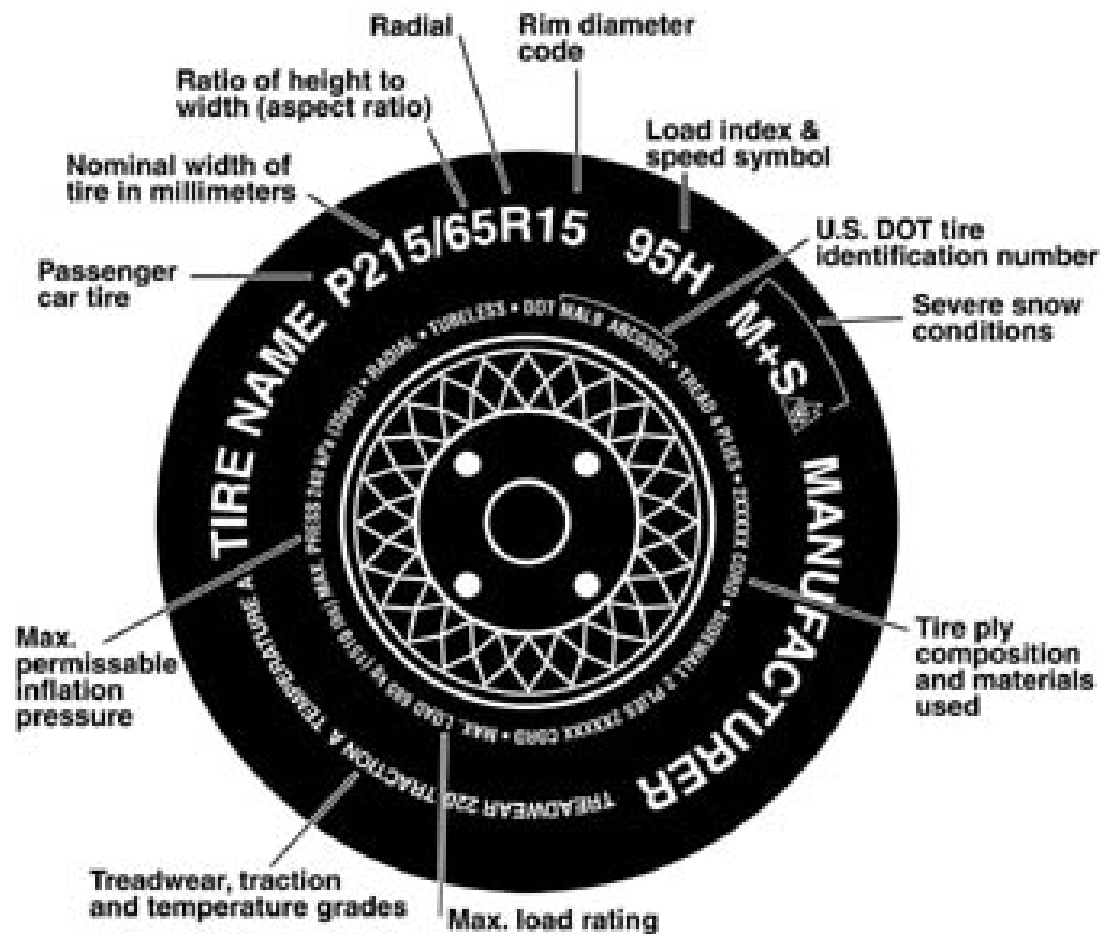
When replacing the tires, use the same type of tires installed by the factory

- All-season tires are best for most passenger cars because they provide a good combination of grip on dry and wet roads, as well as light snow
- Buy the freshest tires available
- Tires have a code stamped that indicates when they were made
- A DOT 10-character code is on the black wall of the tire, beginning with “DOT”
- The last three digits are the date for the week and year the tire was made

Example: 369 would indicate the 36th week of 1999



Tire Replacement





Tire Replacement

- The federal government has a “Uniform Tire Quality Grading System” that is also molded into the tire sidewalls and the rating indicates how long the tires will last
- A rating of 300-400 is considered good; 500-700 is very good
- Tires are rated for traction and how well the tire will stop on a wet surface
- Grades of AA, A, B, and C are used
- Purchase tires with a traction rating of AA or A

